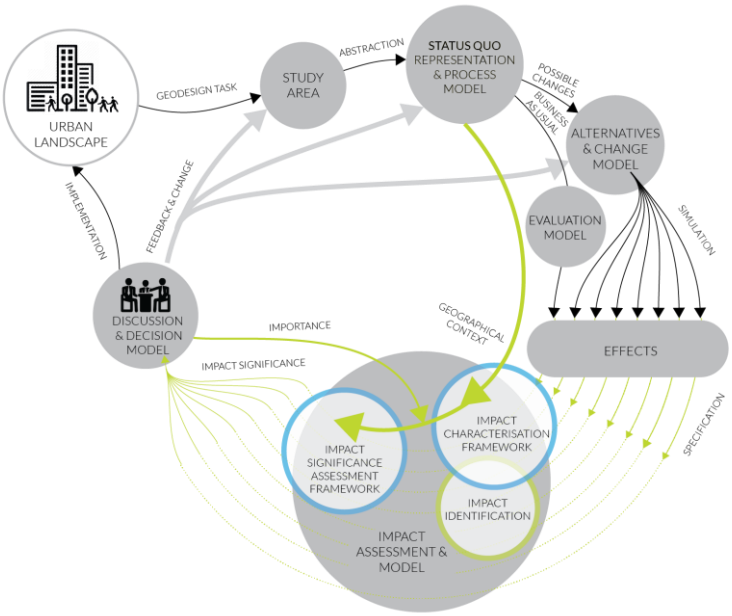
A Framework to Assess Impact Significance in the Geographical Context of Resource Flow Changes

Keywords: =Impact Significance Assessment, Geographical Information Science, Circular Economy

Urbanism Department (/Environmental Technology and Design)

Area of Research: Urbanism



Research Summary: The concept of Circular Economy has clearly gained its momentum during the last decade. Yet unsustainable circular systems can also create social, economic and environmental damage. Sustainability is highly dependent on a system's geographical context, such as location of resources, cultural acceptance, economic, environmental and transport geography. The urban geographical context, (i.e. its sensitivity, vulnerability or potential) is commonly assessed by Spatial Decision Support Systems. However, currently those systems typically do not perform an actual impact assessment as impact characteristics stay constant regardless of location. Likewise, relevant Impact Assessment methods, although gradually becoming more spatial, assume their context as invariable. As a consequence, impact significance so far is also a spatially unvarying concept.

As current technological developments already allow to rapidly record, analyse and visualise spatial data, my research aims to utilize it in pursuit of locally-just and spatially varying impact significance assessment. This research is linked with the H2020 Research & Innovation Action project REPAiR (Resource Management in Peri-urban Areas).

Key Publications: Sileryte, R., Gil J., Wandl A. and van Timmeren, A., 2018. Introducing Spatial Variability to the Impact Significance Assessment. In Geospatial Technologies for All (pp. 179-197). Springer, Cham.

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Main Question: How can GIS be utilized to improve impact significance assessment of resource flow changes to support the transition towards circular resource management?

Deliverables: Programmed modules of the Geodesign Decision Support Environment (GDSE)

Link(s)

http://h2020repair.eu/

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